PDR RID Report

Date Last Modified 7/11/95

Originator Lynnes, C. & Pease, P. **Phone No** 301-286-2260

Organization GSFC DAAC

E Mail Address pease@daac.gsfc.nasa.gov, lynnes@daac.gsfc.nasa.gov

Document CSMS Requirements Spec, DID 304-CD-003-0001

Section 6.3.4.2 **Page** 6-30 - 6-33 **Figure Table**

RID ID PDR 221
Review CSMS
Originator Ref GDAAC-CSS-3
Priority 2

Category Name Requirements **Actionee** HAIS

Sub Category

Subject Message Passing Reliability

Description of Problem or Suggestion:

Our V0 experience with off-the-shelf and system-provided message passing facilities has turned up reliability problems under high message volumes. The resultant lost messages cause havoc in the system.

Originator's Recommendation

Specify message rates that the Message Passing Service must meet with no dropped messages. (The actual number might be TBD until SDPS, FOS and MSS can provide message volume/rate estimates).

GSFC Response by: **GSFC Response Date**

HAIS Response by: Forman **HAIS Schedule** 2/28/95

HAIS R. E. N. Hota **HAIS Response Date** 6/30/95

We concur with the V0 experience. Our testing of message queuing products has shown similar reliability problems - ones which the vendors are not quick to respond to or seem ready to fix. Problems include threading and non-thread safe routines. Messages can be lost (not delivered) and notification to senders may never get back. Based on these findings we are recommending not to use these message queuing products for ECS. We intend to use message passing through the OODCE /DCE provided services, and provide APIs through which senders, as an option, will receive notifications for non-deliverable messages. Our testing so far has found these routines to be thread safe. Message capacity depends on the anticipated volumes plus a generous safety factor. CSS is consulting with MSS, SDPS, and FOS to find the actual message volume/rate requirements for Rel A and will be testing the design against these capacity demands including the safety factor. The design will be tested against our best estimates for Release B message rates as well. These estimates will be based on extrapolation of data provided by Release A developers, information from the AHWG, and prototyping efforts.

Since performance requirements exist system for response times, we do not see the need to add requirements on specific message volumes/rates especially since these volumes/rates would be based on developers/designers estimates.

Status **Closed** **Date Closed** **7/11/95** **Sponsor** **Broder**

****** **Attachment if any** ******